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bers to say whether this desirable work shall be undertaken or not. In the meantime, the thanks of the Society are due to Messrs. Hodges and Smith for the use of Dr. Petrie's admirably executed illustrations of six of these ancient monumental remains.

ON ACOUSTIC VASES AND OTHER RELICS DISCOVERED IN RESTORATIONS LATELY MADE IN THE CHURCH OF ST. MARY, YOUGHAL.

BY E. FITZGERALD, YOUGHAL.

THE history and antiquities of this ecclesiastical foundation have been ably and amply set forth by the Rev. Samuel Hayman, in the "Transactions" for May, 1854. Since the publication of his paper the old church has passed through the wholesome ordeal of a skilful pruning, so that much of the gangrene growth of the seventeenth and eighteenth centuries has been carefully cut away,¹ and a noble effort made towards a complete restoration to its original beauty.

In restoring the ruined choir (see sketches, pp. 99, 117, *ante*), it was necessary to have the old plastering hacked off the walls; whilst engaged at this, the workmen found, at about 25 feet from the ground, five holes, from 3 to 6 inches in diameter, at irregular distances, in the north wall, towards the west end. When viewing this discovery from the ground, the first impression on my mind was, that they were the opes in which originally flag-staffs were placed, and from which probably of old the Geraldine banners floated proudly over their oaken stalls, as this structure (the choir) was the work of one of that race, Thomas, eighth Earl of Desmond, in 1464. However, on closer examination, I found in the front of each ope a perforated piece of free-stone, of about 4 inches in thickness, inside of which the lips or mouths of earthenware vessels made their appearance. On introducing the hand and arm, I found they were complete vases of burnt clay, lying on their sides, perfectly empty; some were nicely glazed, and others without any sign of ever having been so. I was most anxious to have a few of them taken out for further examination, thinking that their exterior sides might have been ornamental, and had the stone-work from two cut away to about half their depth, but found they were so firmly built on and

¹ This, indeed, seems to have been the era of spoliation, and when the building style reached its climax.

embedded in the mortar, that to remove them would have been their certain destruction. Yet, sufficient had been cleared to show that they were perfectly plain, and that some had ears, bearing strong resemblance to Roman amphoræ. By introducing a light I was enabled to measure and make the accompanying sketches of four of them.

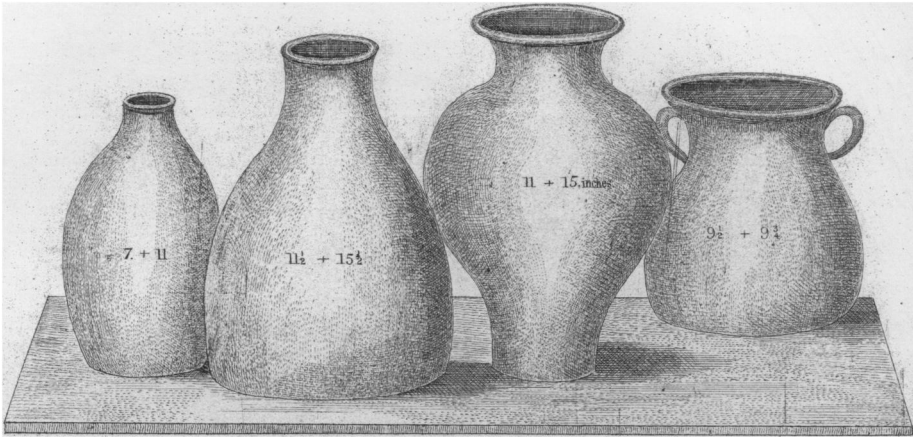
Naturally, the first inquiry was, what were they intended for, and why placed in these positions? This seemed a regular puzzler, some suggesting that they were for hoarding, and must have been the ecclesiastical coffers in disturbed times; others said they were cinerary urns, and placed up safely out of the way: that they were intended for acoustic purposes at once struck my mind,—but then, had we a precedent for such a conclusion?

In a communication to the Rev. James Graves I mentioned the matter to him, and without knowing mine, he at once coincided in the same opinion, and suggested the possibility of those numerous small opes (now empty) in the belfry tower of Dunbrody Abbey being for the same purpose. Subsequently, the workmen were changed round to the south side of the building, and at about the same height, and nearly opposite the former, five other vases were discovered, but of somewhat a smaller size. This discovery at once decided the question in my mind,—that they were all placed there for acoustic purposes, and, no doubt, intended to give effect to the choir, in chanting forth the pealing anthems through “the long-drawn aisles” and echoing arches of the venerable St. Mary’s. This conclusion I found also was fully borne out by ancient usage, as the early Greeks and Italians used bronze and earthenware vases for this purpose in their theatres, as will be found by referring to “*Pompeii*,” vol. i. p. 233 (“*Library of Entertaining Knowledge*”), where, speaking of the Greek theatres, the author says:—

“Still further to increase the resonance of the voice, brazen vases, resembling bells, were placed in different parts of the theatre. It is well known that when two instruments in harmony are placed within the sphere of each other’s influence, if one be struck the other will vibrate the corresponding chord, and the vibration of the second will of course increase and strengthen the sound of the first.”

In Stuart’s “*Athens*,” vol. iv. p. 39, on the Greek Theatre, we also read:—

“Acting on this principle, which particularly suited the recitative in which dramatic compositions were delivered, the ancients had *echeia* of *earth* and metal, modulated to the intervals of the different notes of the voice, placed in small cells under the seats, in one, two, or three rows, according to the extent of the theatre. Hence it resulted that the voice, passing from the scene as the centre, expanded itself all round, and striking the cavity of those vases, produced a clearer and more distinct sound by



ACOUSTIC VASES.

Discovered imbedded in the walls of the Choir of St MARY'S CHURCH, Youghal.



OLD IRISH DUDEENS (Full Size.)

Found in a Cutting made round the Choir of St Mary's Church, Youghal.

Engraved by Litho Pembroke Street Cork.

means of the consonance of these different modulated tones, and extended the powers of the speaker to the utmost limits of the cavea. The vases were in the shape of a bell, placed in an inverted position, the side towards the audience resting on a pedestal not less than half a foot high, in all other respects quite free from contact; and in order to allow the vibration of the sound, a small aperture was left in the front of the seat, about two feet long and half a foot high. It is remarkable that no writer has been able to adduce an existing example in confirmation of the principles, for the *echeia* and their cells, laid down by Vitruvius."

This wonder is explained by Vitruvius himself, from whom (book v. chap. 5), treating of the vases of the theatre, we learn:—

"It may be said that many theatres are built yearly at Rome, in none of which are these contrivances used. But all public theatres have many boarded surfaces, which resound by nature. We may observe this from singers, who, when they wish to raise a loud note, turn to the doors of the scene, and thus receive a help to their voice. But when the theatres are built of solid materials, as stone or marble, which are not sonorous, then these methods are to be employed. If it is asked in what theatre they are made use of, we have none at Rome; but in different parts of Italy, and in the Greek provinces, there are several. We have also the authority of L. Mummius, who destroyed the theatre of Corinth, and brought the brazen vases to Rome, and dedicated them in the temple of Luna. And many skilful architects, who build theatres in small towns, use *earthenware* vases, to save expense, which, when properly arranged, have an excellent effect."

Sir Christopher Wren fully agrees with Vitruvius on this subject, which may be seen by an extract from his *Life*, published by the Society for the Diffusion of Useful Knowledge, pp. 29, 30:—

"In the construction of theatres and of churches, the propagation of sound is one of the most important points to be attended to. The doctrine of *acoustics* is little understood by builders in this country, and yet, however hidden to us the subject may be, it is certain the ancients understood its principles with great accuracy; whilst in modern times this important object of architecture has been almost wholly neglected. Vitruvius describes the effects of the science as well understood by the Greeks," &c.

A curious fact connected with the vases in St. Mary's, Youghal, is that no two are alike, or of one size.

Several instances have come under the writer's notice, presenting examples of rather a rustic manner of carrying out effects of this kind, as it is no uncommon occurrence in this part of the country in taking up old floors, to disentomb a horse's skull, or two, placed there, no doubt, for acoustic purposes, and it is a well-known fact that a gentleman in Cork built the walls of his music-room with horse's heads, having the same object in view.

In "Notes and Queries" for November 11, 1854, an account of jugs or jars being found embedded in the base of the ancient choir-

screen of Fountains Abbey is given, and also a quotation from the "Illustrated London News" for June 17, on the same subject, which says :—

"At a recent meeting of the Royal Institute of British Architects—the Earl de Grey, President, in the chair—his Lordship exhibited several casts and original objects brought from Fountains Abbey. There was also an interesting discussion on the probable use of some curious earthenware jars, imbedded in the base wall of a screen in the nave. These jars were laid in mortar, on their sides, and then surrounded with the solid stonework; the necks protruding from the wall like cannons from the sides of a ship. Their probable use has been the subject of much conjecture."

The first writer says that the neck of the one he saw was crushed by the wheel of a cart which was removing soil and rubbish from the floor, and that "it contained a considerable quantity of a dark substance like burned wood." In "Notes and Queries" for November 25, another writer says that "vessels of a similar character were discovered underneath the choir at St. Peter's Mancroft Church, in Norwich;" and one in his possession—

"Is a jar of common reddish earthenware, glazed in the inside, nine inches deep, and six across the mouth. A dozen or more of these jars were found at intervals, in a line, in the masonry under the stalls of the choir, exactly in the position in which those were at Fountains Abbey, though it did not appear that the mouths of these jars ever protruded from the wall. There was no appearance that they had ever contained anything. I could not learn any conjectures of others as to their use or intention, but from having read of similar vessels being found in other churches, I think in France, with evident remains in them of *human bones or ashes*, I am of opinion that these urns were intended to receive the ashes of the heart, or some other portion of the body, in case any of the canons attached to the church should will that any part of his remains should be so deposited."

In both the cases here mentioned, ashes being discovered in the vases or jars, to my mind must be considered accidental, from the low position in which they were found, and being on their sides; for it cannot be admitted that cremation was used by *Christians* in the thirteenth and fourteenth centuries, and especially among ecclesiastics; furthermore, if they were intended for such use, we should now find them carefully standing on their ends. The last writer on the subject in "Notes and Queries," February 24, signed "Norris Deck, Cambridge," at once settles the question in a way of his own, as he says :—

"It seems to me improbable that *jugs* would be employed either as acoustic instruments, or to hold the ashes of the dead, or for the purpose of strengthening foundations. In Cambridge they are very frequently found in digging up the foundations of old houses, not embedded in the masonry, but lying in the soil below the basement floor; they are generally of the type known as *Bellarmines*, or *Grey-beards*. . . . Now I cannot

help thinking that these *jugs* were used for the obvious purpose of *jugs*, and that they were filled with some generous beverage, with which success or prosperity was drunk to the commencing edifice, and that then these vessels were either thrown promiscuously into the open foundations, or built up in the masonry. This proceeding would be somewhat analogous to our present custom of depositing coins, &c. in such positions; and also to another custom, now dying out, of throwing out of the window, or against the wall, the wine-glass or other vessel out of which some peculiarly cherished toast has been drunk."

This gentleman seems to have come to quick conclusions without much consideration, as none of the writers on the subject make the slightest allusion whatever to any of the jugs or vases discovered having the least resemblance to Bellarmine's or Grey-beards; and if they were "thrown promiscuously into the open foundations," it is most wonderful that all those found in these countries should be in choirs of churches, and all so nicely arranged with their openings to the interior. In the case of those at Youghal we have a high step of some thirty feet (to stumble over) from the "foundations"! and a perforated piece of free-stone pitched "promiscuously"! into the mouths of every one of them, which appears rather miraculous for *our times*. From the fact of most of the vases under consideration being found empty, and on their sides, and all in connexion with the interior of choirs, it seems quite evident, with our ancient precedents before us, that they were *all* intended for acoustic purposes.

The outlines of some of the vases in our illustration are undoubtedly of classic origin. Connecting this with the purpose for which they were intended, we have good reason to conclude that the Irish of that day were not the uncultivated boors we are generally led to imagine, but, on the contrary, were well acquainted with science, eurythmy, and classic beauty.

Several other relics were also got in the course of the restorations at St. Mary's. In clearing the sloped seat of the great east window, a piece of stained glass was found, with a flower on it of the foiled class, in dark purple; little doubt but it was part of the original window; other pieces of stained glass were also picked up from excavations in the south transept, showing that it must have been extensively used in the more palmy days of this venerable foundation. I cannot omit mentioning here that the Rev. P. W. Drew (the rector), in the true spirit of an archæologist, has restored at his own expense several stone-jambed doors, mutilated monuments, and the elegant sedilia, which were brutally broken, and all but destroyed, and he is now filling the noble east window with stained glass. He also raised a considerable portion of the funds towards the general restoration by the Ecclesiastical Commissioners.

The old clay pipes represented in our illustration were dug up in a cutting which was made round the walls of the choir and north

transept, for drainage, and to admit air to the foundations, as they were covered up by soil and rubbish some five feet. Such relics are not unfrequently dug up in this locality, and are often found in taking down the walls of antiquated houses in Youghal. From the discovery of those before us, so close to the church, would it be too much to think that the old burgesses of Raleigh's free and easy times brought their "dudeens" to worship with them, and smoked whilst lounging on the sloping banks, awaiting the gathering congregation? Sir Walter Raleigh was Mayor of Youghal in 1588, and more than probable, about this time, introduced the "weed" to "Paddy's" notice. In Bolster's "Cork Magazine," vol. iii. pp. 405-6, a rather humorous account of the introduction of tobacco into Ireland is given; speaking on this subject the writer says:—

"Whoever introduced it into England, to Raleigh is due the merit of the acquaintance of the Irish with it. It was probably during his quiet administration of the affairs of Youghal, that in the heavy ennui induced by his connexion with the very unlaborious office which he filled, he sought to dissipate the tedium which preyed upon him by his application to the solacement of the weed, and in his first efforts raised in the mind of his beer-bringing Ganymede that alarm of approaching combustion, which he sought to assuage by flinging the tankard and its contents into his worship's face—[of which scene our illustration gives no bad idea]."

"It is, doubtless, the fact that Raleigh initiated the lazy burgesses in all the mysteries of the beatific science which he had introduced; laboriously teaching them its occult delights, and giving to their dreamless vacuity an employment thenceforth fitted to serve them in place of meat, and drink, and clothing. That the use of tobacco leaf was a peculiar blessing to the authorities of Youghal cannot be, for a moment, doubted; there was something very germain in its effects to their peculiar faculties. It gave them an increase to the sum of their calm and unwearied enjoyments,—a soothing companion and bland consoler amid the ills of earth. It tended further to elevate them above the vulgar rabblement of the place; for since all men in common may be distinguished from the bestial, as bipeds, forked, and cooking animals, the distinguished practitioners of the new mysteries could to themselves claim eminence as *smoking* animals."



No wonder, therefore, that our late lamented countryman, the facetious Crofton Croker, should love to store up the different varieties of the old Irish "dudeen," as, no doubt, he inherited this feeling of veneration from his smoking forefathers, having been, it is said, *himself* a Youghal man.

In the "Dublin Penny Journal" (vol. iv. p. 29) he has given some good specimens of the "dudeen," from his own cabinet, and tells us in page 28 : " I feel satisfied that the ancient tobacco pipes hitherto discovered in England and Ireland, belong not to the tenth, but to the seventeenth century, and that they were used by Englishmen, and not by Danes ;" and in page 30 he says that " the smaller the bowl, the more ancient the pipe, and for this there is a reason in the rarity and value of tobacco on its first introduction. I therefore venture to assign No. 3 to the reign of Elizabeth ; No. 2, which is somewhat larger, to that of James I. or Charles I.," &c. Now, how he reconciled " the seventeenth century" and " the reign of Elizabeth" is rather a puzzler,—probably a misprint. But, with all due respect for our lamented townsman's opinions, smoking the old Irish " dudeen" seems of far greater antiquity than he seemed inclined to give it, unless we are fairly prepared for pruning down the antiquated legends of our Irish *cluricaune* to this recent date, as we invariably find those olden " gentlemen" represented with a " wee dudeen in their *ould* wrinkled jaws."¹

¹ Legendary lore can scarcely be taken as affording sufficient data whereon to base any speculation of this kind, as it has been modified throughout every age, adapting itself to the circumstances and prejudices of the times. If any testimony is extant that before the sixteenth century the sprite termed a *cluricaune* was represented as indulging in the use of tobacco, then proof sufficient will be supplied as to the fact of a knowledge of tobacco having existed in Ireland previous to the time of Sir Walter Raleigh ; otherwise our popular traditions cannot be taken into account in weighing the evidence at either side of the question. Mr. Crofton Croker himself, in the communication to the "Dublin Penny Journal" referred to above by Mr. Fitzgerald, noticed some facts, or supposed facts, calculated to afford much stronger evidence of the antiquity of the use of tobacco. He mentions, on the authority of a German periodical of December, 1813, that " in digging a new sluiceway at the upper end of the Fairwater at Dantzic, an ancient ship was discovered nearly twenty feet under the surface of the ground, laden with blocks of stone prepared for building, some of which were highly polished. Many human bones were found in the hold of this vessel, both fore and aft, and

a box of tobacco pipes, all whole, with the heads about the size of a thimble and stalks from four to six inches in length." He also states that he remembers to have seen, " I think in the 'Northern Antiquities' of Bartholinus, a representation of an old carved stone, whereon appears, from the mouth of Odin, a pipe precisely similar in shape to that found at Brannockstown sticking between the teeth of a human skull." We, too, have read in some periodical publication—but we certainly did not altogether credit the allegation—of the existing effigy of one of the old Irish kings, in a graveyard somewhere in the west, being represented " with the short pipe or *dudeen* of the Irish in the mouth." Notwithstanding all this, we are inclined fully to agree with Mr. Croker in his opinion that most of the old clay tobacco pipes turned up in this country, and popularly ascribed to the Danes, really belong to the seventeenth century, and that all the others are scarcely much older. There are in the Museum of the Society numerous specimens, amongst which are examples of all the shapes and sizes, drawn by Mr. Croker, and engraved for the "Penny Journal," and many of the most ancient looking of them are actually inscribed on the shank with characters which cannot be

But whether it was *tobacco*, or some other equally soporiferous narcotic, our national sprite enjoyed, deponent sayeth not, and (unfortunately) being no adept in the mystic use of the lauded "leaf," which—

"On the Moslem's throne divides
His hours, and rivals opium and his brides,"

he must, therefore, beg to submit so grave and important a *question* to the profound notice of more antiquated grey-beard archæologists, who, no doubt, will feel it an imperative duty to give it their serious attention, and not, like many others of *equal importance*, allow it to evaporate in smoke.

assigned to an earlier date than the seventeenth century. One bears the name "Flower Hunt;" others exhibit various initial letters, evidently standing for the names of the manufacturers. In digging for the foundation of the new wing of the Dublin University, about the year 1836, a great number of old clay tobacco pipes were found at some distance beneath the surface, and were cast aside

with the rubbish by the labourers. The Rev. James Graves picked up several of them, which are now amongst those in the Society's Museum. Perhaps this may be deemed a fact calculated to supply evidence that the alumni of old Trinity in times past were inveterate smokers. For our part, we merely wish to put the circumstance thus on record, and leave speculation to others.—EDS.